

Customer No.: 31561
Docket No.: 11579-US-PA
Application No.: 10/710,419

REMARKS

Present Status of the Application

Claims 1-13 are rejected. Specifically, claims 1-6, 8-11 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Kelkar et al. (U. S. Patent 6,462,426; hereinafter Kelkar). Claims 7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kelkar in view of Greer (U. S. Patent 6,451,681). Applicant has amended title and claim 1 to over objections. Applicant has added claim 23 to further define the features of the present invention. After entry of the amendments, claims 1-13 and 24 remain pending in the present application, and reconsideration of those claims is respectfully requested.

Discussion of Claim Rejections under 35 USC 102

Claims 1-6, 8-11 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Kelkar. Applicant respectfully traverses the rejections for at least the reasons set forth below.

1. In the present invention, as for example. Shown in FIG 2A (or FIG 2B), the UBM layer 222 has the first metallic layer 222a and a second metallic layer 222b+222c. *Please note that the UBM layer is different from the bonding pad layer 216.* The second passivation layer 214b is covering the periphery region of the first metallic layer 222a of the UBM layer 222 but not covering the second metallic layer 222b+222c of the UBM layer 222.

In addition, as recited in newly added claim 23, the second metallic layer 222b+222c of the UBM layer 222 does not cover the second passivation layer, too.

Further, dependent claim 6 recites that the first metallic layer is *an adhesion layer, which is not the pad layer.*

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2. In re Kelkar (see Fig. 2), apparently, the Office action has considered the base pad 202 as the first metallic layer of the UBM layer 212. Applicant respectfully disagrees.

The base pad 202 serves to prevent cracks from propagating through the semiconductor package (col. 4, lines 34-37). The base pad 202 is a part of the bonding pad. The UBM layer 212 covers the surface of the base pad 202 (col. 4, line 52). Apparently, the UBM layer 212 is different from the base pad 202.

It should also be noted that the base pad layer 202 is not the adhesion layer of the UBM layer 212, and all of the layers 216, 218, and 220 of the UBM layer 212 (col. 5, lines 41-48) are on the same resilient layer 210. The present invention is apparently distinguishable over Kelkar.

3. The basic layers of the UBM layer is known structure as recited in dependent claim 2. Kelkar (col. 5, lines 41-50) has disclosed that the bottom layer 216 of the UBM layer 212 is Aluminum, the middle layer 218 of the UBM layer 212 is Nickel-Vanadium, and the top layer 220 of the UBM layer 212 is copper. These materials of the UBM layer are similar to the description of the specification of the present invention ([0027]). In other words, the first metallic layer 216, such as the aluminum layer, of the UBM layer 212 in Kelkar is different from the base pad layer 202.

Therefore, Kelkar fails to disclose the first metallic layer 216 of the UBM layer 212 to have the structure as recited in independent claim 1 and the dependent claim 2.

4. Even if the base pad layer 202 is considered as the first metallic layer of the UBM layer 212 by the Office Action, the layers 216+218+220 still covers the second passivation layer 210.

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Kelkar still fails to disclose the features as recited in newly added dependent claim 23. The features recited claim 6 are also not disclosed.

5. For at least the foregoing reasons, independent claim 1 is distinguishable over Kelkar. With at least the same reasons, dependent claims 2-6, 8-11, 13 and 23 are distinguishable over Kelkar.

Discussion of Claim Rejections under 35 USC 103

Claims 7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kelkar in view of Greer. Applicant respectfully traverses the rejections for at least the reasons set forth below.

With at least the reasons applied to claim 1 and 2, the dependent claims 7 and 12 with the features of parent claims 1 and 2 are not disclosed by Kelkar.

In re Greer (see FIG. 3), the layer 312 is considered as the UBM layer of the present invention. Apparently, the layers 304, 306, 308 form the UBM layer 314 also fail to disclose the features of the present invention as recited in independent claim 1. The layer 202 is a conductive film but not the first metal layer of the UBM layer 314.

Therefore, even if Greer is in combination with Kelkar, Kelkar with Greer still failed to disclose the features recited in dependent claims 7 and 12 with missing features of Kelkar with respect to independent claim 1.

For at least the foregoing reasons, Applicant respectfully submits that independent claim 1 patentably define over the prior art references, and should be allowed. For at least the same reasons, dependent claims 2-13 and 23 patentably define over the prior art references as well.

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CONCLUSION

For at least the foregoing reasons, it is believed that all the pending claims 1-13 and 23 of the invention patently define over the prior art and are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

Respectfully submitted,

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